



Recent Trends in Highway Construction Costs

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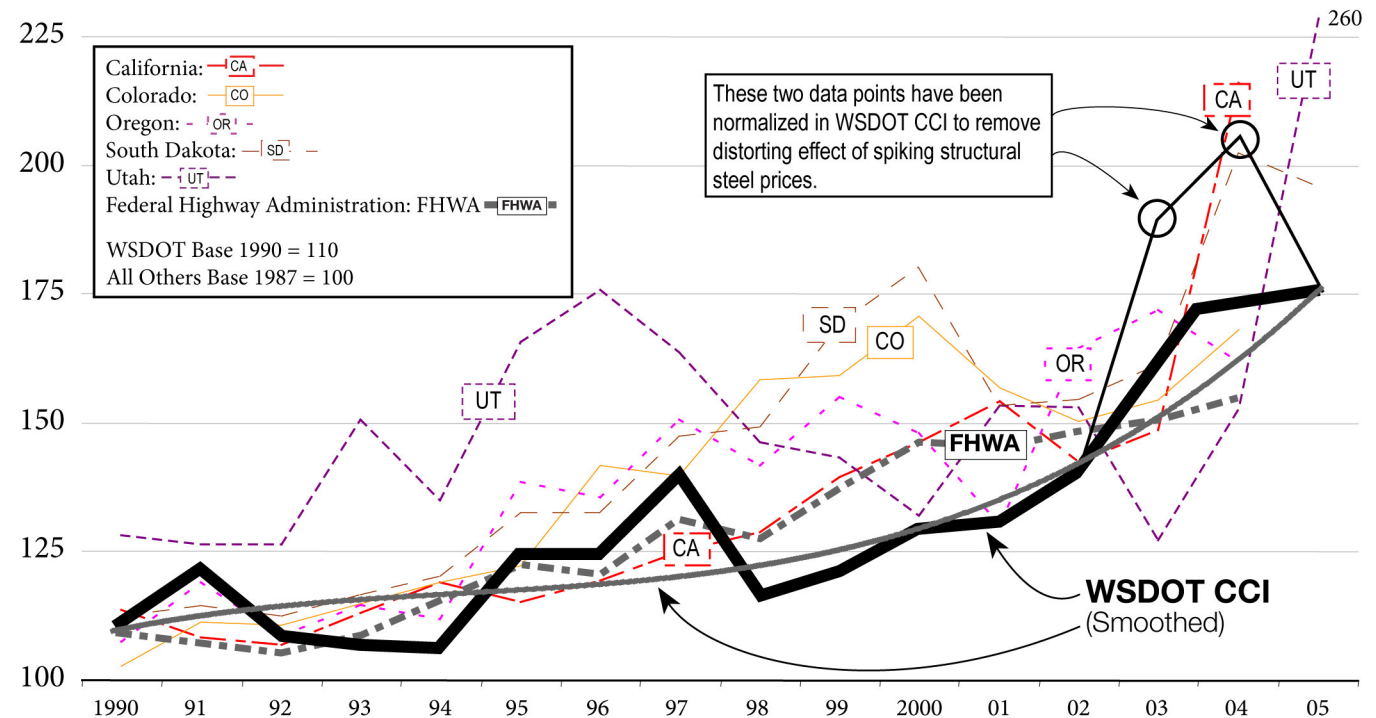
Costs of Construction Materials

The Construction Cost Index (CCI) helps WSDOT track market costs of a “basket” of common highway construction items that are strongly influenced by materials costs.

The following components (weighted as shown) are used to compute the CCI:

- Concrete Pavement 3.2%
- Crushed Surfacing 7.9%
- Roadway Excavation 10.7%
- Structural Concrete 17.4%
- Steel Reinforcing Bar 5.4%
- Structural Steel 6.9%
- Hot Mix Asphalt 48.5%

Data Source: Unit price history from WSDOT bid openings.



The eleven-year average growth rate of the CCI from 1990 through 2001 was 1.5% per year. Since 2001, the average growth rate has been 8.0% per year.

During this period the CCI has been driven up by several factors, among them: the increasing worldwide demand for construction materials such as steel and cement; rising crude oil prices and other energy supply issues that have driven fuel prices up; and recent increases in costs in national and international construction activity, including (most recently) hurricane rebuilding in the South.

What Can WSDOT Do to Mitigate Inflationary Materials Costs Pressures on Project Costs?

WSDOT's Approach

Use the “toolbox” of management options in individual contracts and program wide. These options are scaled-up versions of what any homeowner faces on a remodel or new house project in the same inflationary environment.

- Time the bid to hit materials cost windows. For example, WSDOT tries to bid paving contracts for early season construction to beat the summer season demand rush on asphalt suppliers.
- Give flexibility to contractors to encourage them to shop for the most economical materials values (“performance or end product specifications”).
- Provide early payment provisions (“materials on hand”) so contractors can “lock in” materials prices near to the time they bid so as to minimize the inflation risk of their bids.
- Cost Reduction Incentive Proposals (CRIPs) give contractors a portion of savings for their creative ideas on construction approach that will save materials costs.
- Adjust a project scope to “buy-less” within in a fixed envelope of expected project cost.
- Cancel a project that inflation in materials costs has made too expensive. [Not preferred]

What are the real life implications for specific projects?

SR 7, SR 507 to SR 512 – Safety (July 27, 2005) The project had three bidders. The low bid was 24% (\$2.6 million) over the Engineer’s Estimate.

- Most of the excess over the estimate was haul items (fuel costs and a congested work area), and curbs, islands and sidewalks (concrete prices)

SR 3, SR 303 Interchange (October 19, 2005) There were seven bidders. The low bid was 16.8% (\$2.4 million) over the Engineer’s Estimate

- Most of the excess over the estimate was the large amount of earthwork (fuel prices) and bridges and retaining walls (concrete and steel prices).

SR 202, SR 520 to Sahalee Way (November 29, 2005) The project had eight bidders. The low bid was 8.9% (\$3.3 million) over the Engineer’s Estimate.

- Most of the excess over the estimate was earthwork items involving haul (fuel prices), bridges, walls and foundations (steel and concrete) and Hot Mix Asphalt

SR 543, I-5 to International Boundary (January 18, 2006) There were two bidders with prices ranging from \$27.3 million to \$28.6 million. The low bid was 22.3% (\$5 million) over the Engineer’s Estimate of \$22.3 million.

- Most of the excess over the estimate was retaining walls, noise walls, barrier and pavement (Concrete) and Hot Mix Asphalt. The lack of competition is attributed to the geographical location and mix of work.

The project is pending award if the new project cost requirement is funded in the supplemental budget.

Data Note: WSDOT’s experience is similar to experiences – some much worse than ours – reported by other states and cities. See the backup slides for more information.

Contractor Competition in Bidding as a Factor in Achieving Good Prices for Project Construction

WSDOT must advertise projects in an aggressive, competitive construction contracting market to obtain good construction prices.

The more bidders – qualified and responsible – the better. Less than 3 is not good.

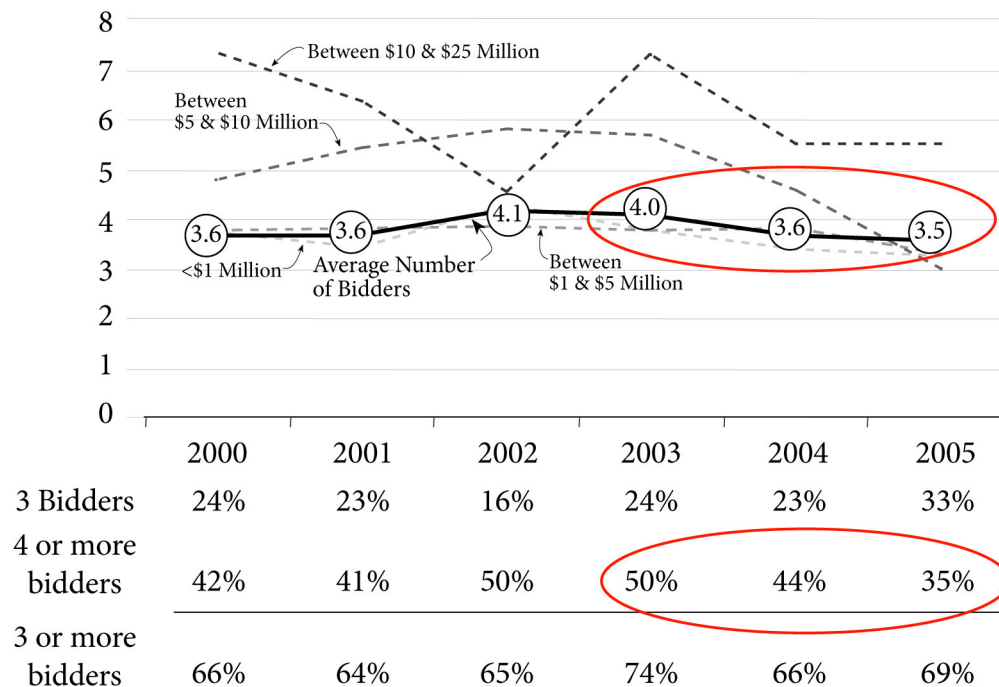
Trends in numbers of bidders on every highway construction project.

Total number of contractors bidding to be a prime contractor on WSDOT highway construction projects from year to year. (In backup slides)

Total number of contractors winning the award of WSDOT highway construction projects from year to year. (In backup slides)

Data Source: WSDOT Construction Office

Average Number of Bidders By Size of Contract



Analysis

- Percent of WSDOT contracts bid by at least 3 firms has been at 67% +/- for six years.
- Percent of WSDOT contracts bid by at least 4 firms has fallen from about 50% in 2002-03 (work was scarce) to about 33% today.
- Percent of WSDOT contracts bid by one firm has fluctuated from 7.7% (2001) to 13.4% (2004)

Contractor Competition in Bidding as a Factor in Achieving Good Prices for Project Construction

WSDOT influences:

Generally:

- Fair and efficient practices in contract administration
- Fair and efficient risk allocation in the contracting relationship.
- Communication of current and future contract opportunities to the contracting community; special outreach on unusual or difficult projects

Individual contracting opportunities:

- Bid advertisements scheduled to promote competitive appetite. (For example paving contracts early in the summer construction season).
- Specifications on which contractors can confidently prepare bids and a fair process for responding to questions and requests for clarification.

WSDOT does not influence:

- Overall volume of public and private sector work seeking contractors.
- Contractors' access to key subcontractors and sources of construction material.
- Bonding and other capacity constraints affecting contractor's appetite for work.
- Market trends in the construction industry towards consolidation and shrinkage of number of local firms.

Materials Costs, Competitive Environment and Bidding Results – Others' Experience

Alaska. Reports of increasing materials costs exacerbated by higher delivery costs. Ketchikan road job recently came in at 78% over \$6 m. estimate (single bidder). Grayling bridge job recently came in at 32% over \$2.3 m. estimate.

Arizona. Materials shortages and few bidders. Recent waiver permits import of Mexican cement. ADOT and Commission looking at program expectations with assistance of a consultant. U.S. 60 Junction job recently came in at 22% over \$58 million estimate. Seligman Hwy concrete paving job came in at 66% over \$3.1 m. estimate.

California. Materials cost escalation and fewer numbers of bidders. Since July 2005, 324 bids on projects with aggregate estimate of \$ 1.4 billion have come in at average of 13.9 % over estimate. Average of 3.3 bidders per job. New study to examine current program expectations.

Colorado. State Hwy 7 job opened in November 2005 at 7% over \$3.5 m. estimate.

Florida. Florida DOT has rejected more bids in the last month than ever before, and so far this FY have received more single bids than in the past years. Florida DOT is calling a summit of stakeholders to discuss out of the box strategies.

Georgia. Higher costs and shortages of equipment, labor and materials due to demand in Gulf Coast.

New Jersey. Rejected all bids on Rte 52 Causeway Bridge. Three bidders. Low bid was \$90 m. over (60% over) the \$152 estimate. *ENR, January 2-9, 2006.*

Utah. High bids. US 191 Moab opened in November 35% over \$5 m. estimate.

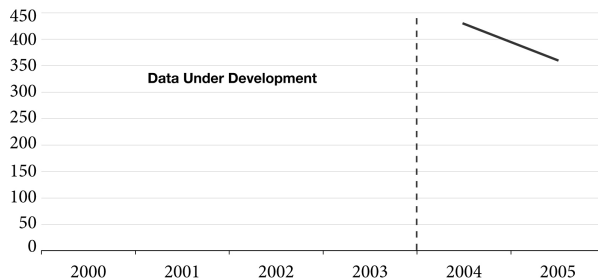
King County, WA. York Bridge Replacement recently opened at 24% over \$7.5 million estimate.

City of Shoreline, WA. Aurora Corridor project recently opened at 10% over \$20.7 million estimate. Only two bidders.

Transportation Improvement Board. Reports that only half of approximately 50 projects in recent survey had as many as three bidders. Reports of some projects with bids as high as 25% over estimates.

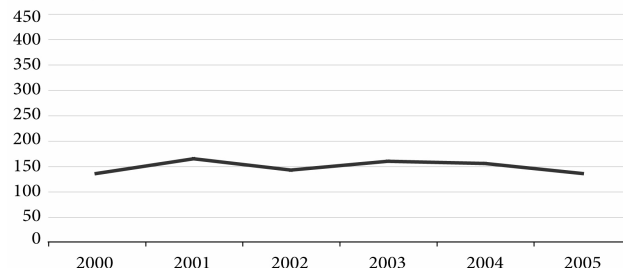
Competitive Market Structure for WSDOT Highway Construction Opportunities

Number of Construction Firms Meeting Prequalification for WSDOT Work



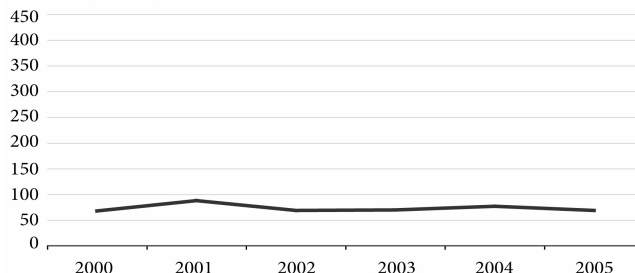
Number of Construction Firms Submitting One or More Bids for Award of a Prime Contract on a WSDOT Highway Project

Number of Bidders



Number of Construction Firms Winning an Award of a Prime Contract on a WSDOT Construction Contract

Number of Successful Contractors



Specialty Areas: Subcontracting and Supply

•**Hot mix asphalt.** Adequate competition in most of Western Washington but only one firm now supplying the majority of the Olympic Peninsula. Much of Eastern Washington sees little or no competition.

•**Roadway striping.** Only three active private firms in Washington.

•**Shaft Drilling.** Six firms now seeking work on WSDOT jobs, but only two have oscillator/rotator capability. WSDOT is encouraging a Utah firm to become active in WA.

•**Concrete pre-stressed structural elements.** Suppliers in Tacoma, Spokane, Yakima and Pasco Oregon and Canadian suppliers would like to play depending on haul costs.

•**Concrete post-tensioned structural elements.** Currently only two firms doing this work. A third is trying to make entry.

•**Steel fabrication.** Now limited to firms in Vancouver and Portland.

Significant Acquisition and Consolidation Trends Affecting Pacific Northwest Market

- 1980's Fiorito Brothers no longer bids highway work
- 1990's Ledcor Industries no longer bids highway work
- 1994 Wilder Construction Co. acquires Construction & Rigging
- 1995 Progressive Contractors Inc. close in Washington
- 1997 Associated Sand & Gravel acquired by ARC Material Corp. (currently known as Rinker Materials)
- 1998 Oldcastle Inc acquires M. A. Segale (currently known as ICON Materials)
- 1998 Atkinson Construction becomes a wholly owned subsidiary of Clark Construction Group, LLC.
- 1999 Oldcastle Inc acquires Inland Asphalt
- 2000 Granite Construction acquires Wilder Construction Co.
- 2001 Superior Asphalt acquires Morrill Asphalt
- 2001 General Construction Company becomes an affiliate of Kiewit Construction
- 2002 American Civil Constructors acquires Hurlen Construction
- 2004 Wilder Construction Co. absorbs key One Way Construction personnel